



SEQUENCE LISTING

<110> Kitamura, Satoshi

<120> Plant Pigment Accumulation Gene

<130> 001458.00048

<140> US 10/797,035

<141> 2004-03-11

<150> JP 2003-066310

<151> 2003-03-12

<160> 38

<170> PatentIn version 3.1

<210> 1

<211> 645

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> misc_feature

<222> (1)..(645)

<223> Sequence of TT19 gene cDNA

<400> 1

atggttgtga aactatatgg acaggtaaca gcagcttgtc caciaagagt cttgctttgt 60

tttctcgaga aaggaattga atttgagatt attcatatcg atcttgatac atttgagcaa 120

```

aaaaaaccag aacatcttct tcgtcagcca ttgggtcaag ttccagccat agaagatgga 180
gatttcaagc tttttgaatc acgagccatc gcgagatact acgctaccaa gttcgcggac 240
caaggcacga accttttggg caagtctcta gagcaccgag ccatcgtgga ccagtgggct 300
gacgtggaga cctattactt caacgttctg gcccaacccc tcgtgattaa cctaatactc 360
aagcctaggt taggcgagaa atgtgacgtc gttttgggtc aggatctcaa agtgaagcta 420
ggagtgggtc tggacatata caataaccgg ctttcttcga accggttttt ggctggtgaa 480
gaattcacta tggctgattt gacgcacatg cgggcgatgg ggtacttgat gagtataacc 540
gatataaacc agatgggttaa ggctcggggg agttttaacc ggtgggtggga agagatttcg 600
gatagaccgt cttggaagaa gcttatggtg ctggctggtc actga 645

```

<210> 2

<211> 214

<212> PRT

<213> Arabidopsis thaliana

<220>

<221> MISC_FEATURE

<222> (1)..(214)

<223> Putative amino acid sequence of TT19

<400> 2

```

Met Val Val Lys Leu Tyr Gly Gln Val Thr Ala Ala Cys Pro Gln Arg
1           5           10           15

```

```

Val Leu Leu Cys Phe Leu Glu Lys Gly Ile Glu Phe Glu Ile Ile His
          20           25           30

```

```

Ile Asp Leu Asp Thr Phe Glu Gln Lys Lys Pro Glu His Leu Leu Arg
          35           40           45

```

```

Gln Pro Phe Gly Gln Val Pro Ala Ile Glu Asp Gly Asp Phe Lys Leu
          50           55           60

```

```

Phe Glu Ser Arg Ala Ile Ala Arg Tyr Tyr Ala Thr Lys Phe Ala Asp
65           70           75           80

```

Gln Gly Thr Asn Leu Leu Gly Lys Ser Leu Glu His Arg Ala Ile Val
85 90 95

Asp Gln Trp Ala Asp Val Glu Thr Tyr Tyr Phe Asn Val Leu Ala Gln
100 105 110

Pro Leu Val Ile Asn Leu Ile Ile Lys Pro Arg Leu Gly Glu Lys Cys
115 120 125

Asp Val Val Leu Val Glu Asp Leu Lys Val Lys Leu Gly Val Val Leu
130 135 140

Asp Ile Tyr Asn Asn Arg Leu Ser Ser Asn Arg Phe Leu Ala Gly Glu
145 150 155 160

Glu Phe Thr Met Ala Asp Leu Thr His Met Pro Ala Met Gly Tyr Leu
165 170 175

Met Ser Ile Thr Asp Ile Asn Gln Met Val Lys Ala Arg Gly Ser Phe
180 185 190

Asn Arg Trp Trp Glu Glu Ile Ser Asp Arg Pro Ser Trp Lys Lys Leu
195 200 205

Met Val Leu Ala Gly His
210

<210> 3

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-f0, which is used for amplifying TT19
genomic region by PCR.

<400> 3

gagaacccca aaaacgtcac

20

<210> 4

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-r0, which is used for amplifying TT19 genomic region by PCR.

<400> 4

gttgtgaggg ttgggtagaa

20

<210> 5

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-f1, which is used for amplifying TT19 genomic region by PCR.

<400> 5

gtggttgttg ggaagagaag

20

<210> 6

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-r1, which is used for amplifying TT19 genomic region by PCR.

<400> 6

cgatggctcg tgattcttag

20

<210> 7

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-f2, which is used for amplifying TT19 genomic region by PCR.

<400> 7

ggtcaagttc cagccataga

20

<210> 8

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-r2, which is used for amplifying TT19 genomic region by PCR.

<400> 8

agcgagagga aagtggaaca

20

<210> 9

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-f3, which is used for amplifying TT19 genomic region by PCR.

<400> 9

ccctcattag gccaaagagaa

20

<210> 10

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-r3, which is used for amplifying TT19 genomic region by PCR.

<400> 10

gagcttatgt ggggaaagtc

20

<210> 11

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-R4, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 11

atcaagtacc ccatcgccgg catgt

25

<210> 12

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-R5, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 12

ggcatgtgcg tcaaatacgc catag

25

<210> 13

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-R6, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 13

aaccggttcg aagaaagccg gttat

25

<210> 14

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-F7, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 14

atatggacag gtaacagcag cttgtc

26

<210> 15

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-F8, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 15

gcagcttgct cacaaagagt cttgct

26

<210> 16

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as MKP11-F9, which is used in TAIL-PCR for isolating two junction sequences of inverted DNA in tt19-1 mutant.

<400> 16

gctttgtttt ctcgagaaag gaattg

26

<210> 17

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as bCC5-8-R1, which is used in TAIL-PCR in tt19-2 mutant.

<400> 17

gacgtcacat ttctogccta acct

24

<210> 18

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as bCC5-8-R2, which is used in TAIL-PCR in tt19-2 mutant.

<400> 18

gaggggttgg gccagaacgt tgaa

24

<210> 19

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Nested primer designated as bCC5-8-R3, which is used in TAIL-PCR in tt19-2 mutant.

<400> 19
cgatggctcg gtgctctaga gact

24

<210> 20

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Degenerate AD primer (AD2) for amplifying the rearranged DNA segments.

<220>

<221> misc_feature

<222> (1)..(16)

<223> n = a, c, g, or t

<400> 20
ngtcgaswga nawgaa

16

<210> 21

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Degenerate AD primer (AD3) for amplifying the rearranged DNA segments.

<220>

<221> misc_feature

<222> (1)..(16)

<223> n = a, c, g, or t

<400> 21
wgtgnagwan canaga

16

<210> 22

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Another AD primer (AD1) for amplifying the rearranged DNA segments.

<220>

<221> misc_feature

<222> (1)..(16)

<223> n = a, c, g, or t

<400> 22
gtncgaswca nawgtt

16

<210> 23

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-RT/f2 which is used in RT-PCR method.

<400> 23
gaacatcttc ttcgtcagcc atttggtcaa

30

<210> 24

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as TT19-RT/r1 which is used in RT-PCR method.

<400> 24

ggttcttcag atcatcataa attggagcta

30

<210> 25

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as CHS-UP which is used in RT-PCR method.

<400> 25

atggctgggtg cttcttcttt gg

22

<210> 26

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as CHS-RP which is used in RT-PCR method.

<400> 26

tctctccgac agatgtgtca gg

22

<210> 27

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as F3'H-UP which is used in RT-PCR method.

<400> 27
catggcaact ctatttctca c 21

<210> 28

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as F3'H-RP which is used in RT-PCR method.

<400> 28
cgtcaccgtc aagatcagtt cc 22

<210> 29

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as DFR-UP which is used in RT-PCR method.

<400> 29
atgggtagtc agaaagagac cg 22

<210> 30

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as DFR-RT/r1 which is used in RT-PCR method.

<400> 30
gacacgaaat acatccatcc tg 22

<210> 31

<211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer designated as CHI-f1, which is used for amplifying CHI
 gene.
 <400> 31
 ctcaacaatg tcttcacca acgcct 26

 <210> 32
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer designated as CHI-r1, which is used for amplifying CHI
 gene.
 <400> 32
 cgaaaacgca accgtaagag ag 22

 <210> 33
 <211> 22
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Primer designated as F3H-f1, which is used for amplifying F3H
 gene.
 <400> 33
 gccggagagt ctaagctcaa ct 22

 <210> 34
 <211> 22
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as F3H-r1, which is used for amplifying F3H gene.

<400> 34

ccacggcctg atgatacagca tt

22

<210> 35

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as LDOX-f2, which is used for amplifying LDOX gene.

<400> 35

gatggttgcg gttgaaagag tt

22

<210> 36

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as LDOX-r2, which is used for amplifying LDOX gene.

<400> 36

aaagcgctta catcggtgtg ag

22

<210> 37

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as AN9-5', which is used for amplifying AN9 gene.

<400> 37

ggatccatgg ttgtgaaagt gcatgg

26

<210> 38

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer designated as AN9-3', which is used for amplifying AN9 gene.

<400> 38

gagctcgtcc cgtactccac aacaat

26